

(Following Paper ID and Roll No. to be filled in your Answer Book)

**PAPER ID : 1289**

Roll No.

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## B. Tech.

(Semester-II) Even Semester Theory Examination, 2012-13

### MANUFACTURING SCIENCE

Time : 3 Hours]

[Total Marks : 80

**Note :** Attempt questions from all Sections as per instructions.

#### Section-A

Attempt *all* parts of this question. Each part carries 2 marks.

2×8=16

1.
  - (a) What is the difference between stiffness and toughness?
  - (b) How is Charpy test different from Izod test ?
  - (c) Define the term heat treatment. What are the purposes of heat treatment!
  - (d) Specify the material used for aircraft frames, composition and reasons.
  - (e) What are the components of die and punch assembly?
  - (f) What is the function of core in mould making?
  - (g) Which type of gas flame in gas welding is mostly used? Why?
  - (h) Define production and productivity.

#### Section-B

Attempt any *three* parts of this question. Each part carries 8 marks.

8×3=24

2.
  - (a) Draw a typical creep test curve showing different stages. Explain the same.
  - (b) Write the properties and uses of following
    - (i) Zinc and its alloys.
    - (ii) Aluminium and its alloys.
  - (c) Explain Direct and Indirect Extrusion with the help of neat sketches.
  - (d) Explain the principle used in shaper. Write the differences between shaper and planer.
  - (e) What are the steps involved in Powder Metallurgy process? Explain in brief.

### Section-C

Attempt *all* questions of this Section. Each question carries 8 marks.

8×5=40

3. Explain any two of the the following

- (i) Resilience
- (ii) Toughness
- (iii) Destructive Testing

4. Describe the properties and uses of low carbon steel, medium carbon steel and high carbon steel.

Or

Differentiate annealing and normalizing processes.

5. Describe the process of die casting with neat sketch. Also write advantages of die casting.

Or

Define Rolling. What are the types of rolling processes? Explain with neat diagrams.

6. Draw the block diagram of lathe machine showing different parts. Explain the different operations performed on lathe.

Or

What is the principle used in Resistance welding? Explain spot welding with neat diagram.

7. Write short notes on any two of the following.

- (i) Plant layout.
- (ii) Galvanizing
- (iii) Plastic Injection molding.